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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,765	07/11/2005	David Lee Sandbach	9637-076/NP	6038
27572 7590 08/17/2007 HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			EXAMINER DUNLAP, JONATHAN M	
			ART UNIT	PAPER NUMBER
			2855	
			MAIL DATE	DELIVERY MODE
			08/17/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/541,765

Applicant(s)

SANDBACH ET AL.

Examiner

Jonathan Dunlap

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                            |                                                                                         |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                           | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**Claims 1-2, 7, 9-13 and 16-17** are rejected under 35 U.S.C. 102(b) as being anticipated by **Eventoff (U.S. Patent 4,810,992)**.

Considering claim 1, Eventoff discloses a manually deformable input device **300 or 20** responsive to manually applied pressure (**Figure 1 and 12a; Column 7, lines 51-57**), comprising:

- A deformable resilient element **314 or 24** configured to deform in response to said manually applied pressure (**Figures 1, 12a and 12b; Column 3, lines 43-67; Column 7, lines 51-57; Column 8, lines 19-31**), operatively coupled with:
  - Electroconductive material **324, 54, 56 (any)** configured to exhibit changes in conductance (resistance) in response to being stretched, said electroconductive material operatively coupled to said deformable resilient element such that said electroconductive material is responsive to deformation experienced by said deformable resilient element (**Figures 1, 9 and 12b; Column 2,**

**lines 29-47; Column 3, lines 65-68; Column 4, lines 1-42;**

**Column 6, lines 19-31; Column 7, lines 51-57);**

- An electrical interface device **326** configured to supply electrical current **via 328** through said electroconductive material **324** via a first terminal **306** connected to said electroconductive material **324** and a second terminal **304** connected to said electroconductive material **324** connected to said electroconductive material **324** to establish a voltage gradient across said electroconductive material **324** between said first terminal **306** and said second terminal **304** (**Figure 12a; Column 7, lines 62-68; Column 8, lines 1-26**); and
- A third terminal **316** or **318** connected to said electroconductive material **324** at an intermediate position along the electroconductive material **324**, between the first terminal **306** and the second terminal **304**, and said interface device **326** is configured to receive a voltage from said third terminal **316** or **318** (**Figure 12a; Column 7, lines 36-38, lines 62-68; Column 8, lines 1-26**).

Considering claim 2, Eventoff discloses that said electroconductive material **324**, **54, 56** is applied over said deformable resilient element **314, 24** (**Figure 3; Column 3, lines 65-66; Column 4, lines 15-16**).

Considering claim 7, Eventoff disclose that said electroconductive material **216** is an elastomeric material having electroconductive components therein (**Column 6, lines 49-52**).

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Considering claim 9, Eventoff discloses that the conductance of said electroconductive material **54** increases when said material **54** is stretched (**Column 6, lines 25-31**).

Considering claim 10, Eventoff discloses that said interface device **326** is configured to measure a divided voltage between said first terminal and said second terminal (**Figure 12a; Column 8, lines 10-14, lines 4-10; Column 7, lines 13-25**).

Considering claim 11, Eventoff discloses that said interface device **326** is configured to produce an output signal (**Figure 12a; Column 1, lines 27-39; Column 6, lines 32-37; Column 8, lines 23-26**).

Considering claim 12, Eventoff discloses that said output signal is used to: control a motor; provide an input command to a game; raise an alarm condition; raise a visual, aural or tactual effect response; control a cursor; navigate a menu (**Column 1, lines 27-39**).

Considering claim 13, Eventoff discloses that the device **300** is configured to be responsive to translation, rotation, compression or indentation **F** of said deformable resilient element **314** (**Figure 12b; Column 8, lines 4-10b**).

Considering claim 16, Eventoff discloses that the device further comprises a fourth terminal (**Figures 2-12a and 13-14b; For example, but not exhaustive, 26,28,30 or 32 of Figure 9; Column 5, lines 45-50**).

Considering claim 17, Eventoff discloses a method of detecting deformation of a deformable input device, said method comprising the steps of:

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- Providing a deformable resilient element **314** or **24** configured to deform in response to applied pressure (**Figures 1, 12a and 12b; Column 3, lines 43-67; Column 7, lines 35-40, lines 51-57; Column 8, lines 19-31**);
- Providing an electroconductive material **324, 54, 56 (any)** configured to exhibit changes in conductance (resistance) in response to being stretched (**Figures 1, 9 and 12b; Column 2, lines 29-47; Column 3, lines 65-68; Column 4, lines 1-42; Column 6, lines 19-31; Column 7, lines 51-57**);
- Providing said electroconductive material **324** operatively coupled to said deformable resilient element **314** or **24** such that said electroconductive material **324** is responsive to deformation experienced by said deformable resilient element **314** or **24** (**Figures 1, 9 and 12b; Column 2, lines 29-47; Column 3, lines 65-68; Column 4, lines 1-42; Column 6, lines 19-31; Column 7, lines 51-57**);
- Providing a first electrical terminal **306** connected to said electroconductive material **324** (**Figure 12a; Column 7, lines 29-51**);
- Providing a second electrical terminal **304** connected to said electroconductive material **324** (**Figure 12a; Column 7, lines 29-51**);
- Providing a third electrical terminal **316** or **318** connected to said electroconductive material **324** at a position intermediate position along

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the electroconductive material, between said first terminal **306** and said second terminal **304** (**Figure 12a; Column 7, lines 36-38**);

- Providing an electrical interface device **326** configured to supply electrical current **via 328** through said electroconductive material **324** via said first terminal **306** and said second terminal **304**, and configured to receive a voltage from said third terminal **316 or 318** (**Figure 12a and b; Column 1, lines 61-68; Column 2, lines 1-11; Column 7, lines 36-38; Column 8, lines 4-10**);
- Establishing a voltage gradient across said electroconductive material **324** via said first terminal **306** and said second terminal **304** (**Figure 12a; Column 7, lines 67-68; Column 8, lines 1-10**); and
- Measuring a voltage appearing at said third terminal **316 or 318** (**Figure 12a; Column 8, lines 4-14**).

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. **Claims 3-4** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Eventoff (4,810,992)** in view of **Lizasoain et al. (U.S. Patent 3,398,233)**.

The invention by Eventoff discloses all of the claimed limitations of **claim 1** but fails to disclose, according to claim 3, that the electroconductive material is embedded

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within the deformable element and according to claim 4, that the deformable resilient element is constructed from a foam or foam-like material, rubble or silicon rubber.

3. However, Lizasoain teaches:

Considering claim 3, that said electroconductive material is embedded within said deformable element (**Column 3, lines 8-19; Column 4, lines 63-69**)

Considering claim 4, that said deformable resilient element is constructed from a foam or foam-like material, rubber or silicone rubber (**Column 2, lines 19-38**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate an electroconductive material embedded into a deformable element that is made of foam or rubber as taught by Lizasoain in the invention by Eventoff. The motivation for doing so is found in the teachings of Lizasoain, "The present invention provides an electrical element which has the property of increasing its electroconductivity in conformance with the magnitude of an externally applied force regardless of whether it be of compression or expansion" (**Column 1, line 72; Column 2, lines 1-4**).

4. **Claims 5-6, 8 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Eventoff (4,810,992)** in view of **Gibson et al. (U.S. Patent 4,689,873)**.

The invention by Eventoff discloses all of the claimed limitations of **claim 1** but fails to disclose, according to claim 5, that the electroconductive material is electroconductive material is a textile fabric and according to claim 6, that the textile



fabric is a warp knit, a weft knit or a weave that includes conductive fibres and according to claim 14, that the device comprises a frame.

5. However, Gibson teaches:

Considering claim 5, that said electroconductive material **14** is a textile fabric

Considering claim 6, that said textile fabric is a warp knit, a weft knit or a weave that includes conductive fibres **20,22 (Figure 1; Column 3, lines 28-39)**.

Considering claim 8, teaches that said deformable resilient element and said electroconductive material are provided by an elastomeric electroconductive textile **(Figure 3; Column 4, lines 34-44; resilient element is electroconductive material)**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a electroconductive textile fabric comprised of warped, weft or weaved conductive fibers as taught by Gibson in the invention by Eventoff. The motivation for doing so is found in the teachings of Gibson, in that Gibson teaches "an electrographic touch sensor employing simplified fabrication and materials of reduced cost resulting in lowered manufacturing costs" **(Column 1, lines 7-12)**.

6. Furthermore, Gibson teaches, considering **claim 14**, that the device comprises a frame **(Figure 6; Column 5, lines 48-63)**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a incorporate a frame as taught by Gibson in the invention by Eventoff. The motivation for doing so is found in the teachings of Gibson,

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in that Gibson teaches "There are applications where it would be desirable to retrofit a video display with a touch sensor" (**Column 5, lines 42-47**).

7. **Claim 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Eventoff (4,810,992)** in view of **Asher (U.S. Patent 5,689,285)**.

The invention by Eventoff discloses all of the claimed limitations of **claim 1** but fails to disclose, according to claim 15, that the device comprises a gripping member.

8. However, Asher teaches, considering **claim 15**, that the device comprises a gripping member (**Figure 1; Column 17-27, 45-61; Column 4, lines 49-66**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a gripping member as taught by Asher in the invention by Eventoff. The motivation for doing so is found in the teachings of Asher, "Many computer, consumer, and industrial applications will require a joystick controller that is very low cost...[and]...the present invention employs a simple interface that both measures the membrane sensor and then converts these analog signals into a format which is easily interfaced to microcontrollers..." (**Column 3, lines 16-41**).

### ***Response to Arguments***

Applicant's arguments filed June 19, 2007 have been fully considered but they are not persuasive.

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**Applicant argues** the rejection under 102(b) and 103(a), stating that Eventoff fails to disclose the configuration of the first, second and third terminals as claimed in claims 1 and 17.

**The Examiner takes note** of the arguments based on a 103(a) obviousness rejection, but respectfully points out that the claims were rejected under 102(b) as being anticipated by Eventoff, and thus, the response to the arguments for 103(a) will be satisfied by a response to the arguments of 102(b).

**As best interpreted by the Examiner**, the configuration of the first, second and third terminals as claimed in claims 1 and 17 requires several features:

- A first terminal connected to the electroconductive material which introduces an electric current to the electroconductive material;
- A second terminal connected to the electroconductive material which introduces an electric current to the electroconductive material; and
- A third terminal connected to the electroconductive material at an intermediate position between the first and second terminals.

**It is the Examiner's position** that Eventoff clearly discloses:

- A first terminal **306** connected to the electroconductive material **324**, which introduces an electric current **via 328** to the electroconductive material **324**;
- A second terminal **304** connected to the electroconductive material **324**, which introduces an electric current **via 328** to the electroconductive material **324**; and

- A third terminal **316** or **318** connected to the electroconductive material **324** at an intermediate position between the first **306** and second **304** terminals.

Support for the disclosure by Eventoff can be found in Figure 12a, Column 7, lines 51-68 and Column 8, lines 1-14. Eventoff clearly states that a voltage (current) is applied to a pair of terminals (306, 304) and the third terminal (316 or 318) is placed between the first and second terminals to record a voltage.

**In response to applicant's arguments** against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of


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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Dunlap whose telephone number is (571) 270-1335. The examiner can normally be reached on M-F 8-5 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jonathan Dunlap  
Examiner  
AU 2855  
August 10, 2007



MICHAEL CYGAN, PH.D.  
PRIMARY EXAMINER